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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/631,369	Applicant(s) GARGI ET AL.
	Examiner HUNG Q. PHAM	Art Unit 2159

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23 and 27-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23 and 27-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

<u>*Duplicate Claims, Warning*</u>

Applicant's arguments, with respect to the warning of duplicative claims have been fully considered and are persuasive. There was a typo regarding the duplicative claims as specified in the Office Action 12/18/2008. Claims 8 and 9 should be mentioned in the warning, instead of claims 7 and 9. The warning of duplicative claims 7 and 9 has been withdrawn. However, a new warning of duplicative claims 8 and 9 will be addressed in this Office Action.

<u>*Claim Rejections - 35 USC § 101*</u>

The rejection of claims 22, 32 and 51 under 35 U.S.C. § 101 has been withdrawn in view of the amendments.

<u>*Claim Rejections - 35 USC § 112*</u>

Applicant's arguments with respect to the rejection of claims 1, 33, 36 and 51 under 35 U.S.C. § 112, 1st paragraph, and the rejection of claim 33 under 35 U.S.C. § 112, 2nd paragraph, have been fully considered and are persuasive. The rejections of claims 1, 33, 36 and 51 under 35 U.S.C. § 112, 1st paragraph, and claim 33 under 35 U.S.C. § 112, 2nd paragraph, has been withdrawn.

<u>*Claim Rejections - 35 USC § 102 and 103*</u>

- Applicant's arguments with respect to the rejection of claim 1 under 35 U.S.C. § 102(b) have been fully considered but they are not persuasive.

As argued by applicant (Remarks, Page 18):

The rejection of claim 1 under 35 U.S.C. § 102(b) over Graham should be withdrawn because Graham does not expressly nor inherently disclose each and every element of the claim.

For example, Graham does not expressly nor inherently disclose "comparing the candidate object interval to a weighted measure of cluster extent for the current object cluster, the measure of cluster extent corresponding to a current distance spanned by all the objects in the current object cluster measured in the selected dimension of the context-related metadata," as recited in claim 1.

The examiner respectfully disagrees.

As taught by Graham, when taking a picture with a digital camera, the equipment records the date and time when the photo was taken, as well as technical details, such as aperture settings, distance from the focal plane, and whether a flash was used. This data is encoded into the image files (Graham, Page 2, Col. 1-Lines 32-37). In order to cluster images based on time metadata, the Graham's technique has three steps: (1) Create initial cluster, (2) Split initial cluster and (3) Create parent cluster. Creating initial cluster is processed by sorting the list of photographs in the collection with respect to time. Root node and initial clusters under root node are created by iterating the sorted list of photographs for adding photographs into initial clusters using a specified constant time difference between two consecutive photographs, e.g., every time two consecutive photographs differ by more than a specified constant time difference, the current image is added to a new initial cluster (Page 4, Col. 2-Lines 3-18).

In view of Graham's teaching, for example, a list of photographs is sorted by recorded time as below:

T1 (7:30Am)-T2 (7:32Am)-T3 (9:30 Am)-T4 (9:45Am)-T5 (10:07Am)…

wherein T1, T2… represent photographs, and each photograph has a corresponding recorded time.

If greater than 60 minutes is specified as a constant time difference between two consecutive photographs as taught by Graham, a first initial clusters C1 will be created for {T1, T2}, because the difference between T1-T2 is 2 minutes and less than 60 minutes, wherein the difference between T2 and T3 is 118 minutes. T3 will be processed against T4 and in the same manner to the end of the sorted list.

The clustering in Graham's technique is based on time from photo's metadata. Time is considered as being equivalent to the claimed ***selected dimension of context-related metadata***. The Graham's time interval between two consecutive photographs is considered as being equivalent to the claimed ***candidate object interval***. The Graham's specified constant time difference, e.g., greater than 60 minutes, is considered as being equivalent to the claimed ***a weighted measure of cluster extent***. The maximum time difference of every two consecutive objects in a cluster, e.g., equal or less than 60 minutes of T1-T2 in C1, is considered as being equivalent to the claimed ***the measure of cluster extent***. The maximum time difference of T1 and T2 corresponds to ***a current distance***, e.g., 60 minutes, ***spanned by all the objects in the current object cluster***, e.g., equal or less than 60 minutes distance is spanned from every consecutive photographs in C1. The maximum 60 minutes is time measurement or ***the selected dimension of context-related metadata***.

In short, the Graham's technique reads on the claimed limitation ***comparing the candidate object interval to a weighted measure of cluster extent for the current object cluster***, e.g., time interval between two consecutive photographs such as T1 and T2 is compared with specified constant time difference such as greater than 60 minutes for the current cluster C1, ***the measure of cluster extent***, e.g., the maximum time difference of every two consecutive objects such as T1-T2 in C1, ***corresponding to a current distance***, e.g., the maximum time difference of every two consecutive objects such as T1-T2 corresponds to equal of less than 60 minutes distance, ***spanned by all the objects in the current object cluster***, e.g., equal or less than 60 minutes distance is spanned from

every consecutive photographs in C1, ***measured in the selected dimension of the context-related metadata***, e.g., the maximum 60 minutes is time measurement.

- Applicant's arguments with respect to the rejection of claims 2-19, 21 and 22 under 35 U.S.C. § 102(b) have been fully considered but they are not persuasive (Remarks, Page 19). Claims 2-19, 21 and 22 are unpatentable over Graham for at least the reasons as discussed above regarding claim 1.

- Applicant's arguments with respect to the rejection of claim 23 under 35 U.S.C. § 102(b) have been fully considered but they are not persuasive.

As argued by applicant (Remarks, Pages 19-20):

> *The rejection of claim 23 under 35 U.S.C. § 102(b) over Graham should be withdrawn because Graham does not expressly nor inherently disclose each, and every element of the claim.*
>
> *For example, Graham does not expressly nor inherently disclose "extracting context-related meta data corresponding to object generation locations associated with the objects and parsable into multiple levels of a name hierarchy." The "corresponding to object generation locations" element of claim 23 originally was recited in dependent claim 26. In support of the rejection of claim 26, the Examiner has taken the position that Graham discloses the "corresponding to object generation locations" element of claim 23 on page 4, col. 2, lines 33-42 (see page 12: Sixth ¶ of the Office action) Contrary to the Examiner's assertion, however, page 4, col. 2, lines 33-42, only discloses the process of refining the initial clusters based on the rate at which photographs are taken. The description on page 4, col. 2, lines 33-42, relating to different locations merely illustrates examples of cases in which "the rate at which photographs are taken is likely to differ significantly between types of events."*
>
> *For at least this reason, the rejection of independent claim 23 under 35 U.S.C. § 102(b) over Graham should be withdrawn.*

The examiner respectfully disagrees.

As taught by Graham, as global position system (GPS) are integrated into digital cameras, the location where a photograph was taken could also be extracted from the image

files and introduced as a clustering criterion (Graham, Page 3, Col. 2-Line 39→Page 4, Col. 1-Line 2). The cluster engine uses the extracted metadata to compute clusters. It is equally easy to cluster the data based on location when GPS data is available. The engine's output is a cluster tree (Graham, Page 4, Col. 1-Lines 8-13). The generated clusters of photographs are combined into more general clusters using fixed year-month-day hierarchy for the higher levels. That is, for each cluster C discovered in step 1, date of its first photograph is determined and then C is made as a child of the appropriate day in the year-month-day hierarchy (Graham, Page 5, Col. 1-Lines 16-29).

The Graham's teaching as discussed reads on the claimed limitation ***extracting context-related meta data corresponding to object generation locations associated with the objects***, e.g., GPS location data associated with photographs is extracted, ***and parsable into multiple levels of a name hierarchy***, e.g., the GPS location data is analyzed as a clustering criterion into year-month-day hierarchy.

- Applicant's arguments with respect to the rejection of claims 27-32 under 35 U.S.C. § 102(b) have been fully considered but they are not persuasive (Remarks, Page 20). Claims 27-32 are unpatentable over Graham for at least the reasons as discussed above regarding claim 23.

- Applicant's arguments with respect to the rejection of claim 33 under 35 U.S.C. § 102(b) have been fully considered but they are not persuasive.

As argued by applicant (Remarks, Page 21):

> *The rejection of claim 33 trader 35 U.S.C. § 102(b) over Graham should be withdrawn because Graham does not expressly nor inherently disclose each and every element of the claim.*
>
> *For example, Graham does not expressly nor inherently disclose "selecting for each object cluster at least two constituent objects representative of beginning and ending instances in the corresponding object sequence."*

The Examiner has taken the position that Graham discloses this element of claim 33 on page 5, col. 2, lines 42-47 (see page 14, top¶ of the Office action). Contrary to the Examiner's position, however, the cited paragraph of Graham only discloses how the screen space is allocated in proportion to the number of photos in each cluster.

For at least this reason, the rejection of claim 33 under 35 U.S.C. § 102(b) over Graham should be withdrawn.

The examiner respectfully disagrees.

As taught by Graham in the section Creating Summaries on page 5, an alternative to scrolling is summarization as in FIG. 1a and 1b. Instead of displaying all images, a set of representative images is shown (Graham, Page 5, Col. 2-Lines 14-16). The input to Graham's summarization procedure is a set of sequential cluster C at level k in the hierarchy and a target T, the desire number of representative photographs (Graham, Page 5, Col. 2-Lines 23-25). The summarization procedure assigns one space to each cluster in C. If the total of one space to each cluster is M, the remaining T – M spaces is assigned to clusters in proportion to their sizes. As an example of creating the summarization of 3 clusters, C1 (including its children) has 20 photos, C2 has 10 and C3 has 5. After one slot is assigned for each cluster, the remaining 7 slots are assigned proportionally to C1-C3, e.g., 4 more to C1, 2 to C2 and 1 to C1. Thus, C1 gets 5 spaces, C2 get 3 and C3 get 2 (Graham, Page 5, Col. 2-Lines 35-47). To select summarization photographs for the assigned spaces, representative images are chosen by looking for the smallest time difference and largest time differences between consecutive photographs. For example, if 4 summary photos are needed, 1 of closest photos and 3 of largest difference are selected (Graham, Page 6, Col. 1-Lines 37-49).

In view of Graham's teaching of assigning spaces for C1, C2 and C3 and selecting summarization photographs for assigned space, C1 has 1 photograph representing the smallest time difference and 4 photos representing the largest time differences. C2 has 1 photograph

representing the smallest time difference and 2 photos representing the largest time differences. C3 has 1 photograph representing the smallest time difference and 1 photo representing the largest time difference.

The Graham's teaching as discussed indicates the step of ***selecting for each object cluster at least two constituent objects representative of beginning and ending instances in the corresponding object sequence***, e.g., for C3, at least 2 constituent photos (1 photograph representing the smallest time difference and 1 photo representing the largest time difference) representing beginning and ending instances in the corresponding photo sequence of C3, which is 5 photos.

- Applicant's arguments with respect to the rejection of claims 34-37, 39-49 and 51 under 35 U.S.C. § 102(b) have been fully considered but they are not persuasive (Remarks, Page 21). Claims 34-37, 39-49 and 51 are unpatentable over Graham for at least the reasons as discussed above regarding claim 33.

- Applicant's arguments with respect to the rejection of claims 20, 38 and 50 under 35 U.S.C. § 103(a) have been fully considered but they are not persuasive (Remarks, Page 21). Claims 20, 38 and 50 are unpatentable over Graham for at least the reasons as discussed above regarding claims 1 and 33.

- In view of the foregoing reasons, the rejections under 35 U.S.C. § 102(b) and 103(a) are continued as following.

Duplicate Claims, Warning

Applicant is advised that should claim 8 be found allowable, claim 9 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-19, 21-23, 27-37, 39-49 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham et al. [Time as Essence for Photo Browsing Through Personal Digital Libraries].

Regarding claims 1 and 22, Graham teaches a method and system for organizing a collection of objects arranged in a sequence ordered in accordance with a selected dimension of context-related metadata respectively associated with the objects (A collection of images arranged in is sorted with respect to time as a selected dimension of context-related metadata respectively associated with the objects (Graham, Page 4[1], Col. 2[2] Lines 4-5)), comprising:

---

[1] *The first page of the reference is considered as page 1.*
[2] *The left column of the page is col. 1 and the right column of the page is col. 2.*

a computer-readable medium storing computer-readable instructions; and a data processing; unit coupled to the memory, operable to execute the instructions (These features are inherited features of a computer system as disclosed by Graham on Page 5, Col. 2-Lines 2-13), and based at least in part on the execution of the instructions operable to perform operations comprising

classifying the objects in the sequence to generate a series of object clusters, wherein the classifying comprises sequentially processing each of the objects as a respective candidate for segmentation into a respective current one of the object clusters in the series and, for each of the candidate objects (A series of object cluster as in Fig. 4 (Graham, Page 5) is generated according to classifying technique as disclosed on Page 4, Col. 2 Lines 3-18),

determining a candidate object interval separating the candidate object from an adjacent object in the sequence already segmented into the current object cluster, the candidate object interval being measured in the selected dimension of the context-related metadata (As further disclosed by Graham, for each image in the sorted list, time interval of two consecutive images is determined, the time interval separates two consecutive images, wherein one is a candidate image and one is an adjacent image in a current cluster (Graham, Page 4, Col. 2 Lines 3-18). The time interval as disclosed by Graham is considered as being equivalent to *candidate object interval separating the candidate object from an adjacent object in the sequence already segmented into the current object cluster*. The time interval is measured in time as *selected dimension of context-related metadata respectively associated with the objects*),

comparing the candidate object interval to a weighted measure of cluster extent for the current object cluster, the measure of cluster extent corresponding to a current distance spanned by all the objects in the current object cluster measured in the selected dimension of the context-related metadata (Every time two consecutive photographs differ by more than a specified constant time difference, e.g., 1 hour difference, a new cluster is created and the current image is added to the most recently created cluster (Graham, Page 4, Col. 2 Lines 3-28). In view of Graham's teaching, for example, a list of photographs is sorted by recorded time as: T1 (7:30Am)-T2 (7:32Am)-T3 (9:30 Am)-T4

(9:45Am)-T5 (10:07Am)… wherein T1, T2… represent photographs, and each photograph has a corresponding recorded time. If greater than 60 minutes is specified as a constant time difference between two consecutive photographs as taught by Graham, a first initial clusters C1 will be created for {T1, T2}, because the difference between T1-T2 is 2 minutes and less than 60 minutes, wherein the difference between T2 and T3 is 118 minutes. T3 will be processed against T4 and in the same manner to the end of the sorted list. In short, the Graham's technique reads on the claimed limitation *comparing the candidate object interval to a weighted measure of cluster extent for the current object cluster*, e.g., time interval between two consecutive photographs such as T1 and T2 is compared with specified constant time difference such as greater than 60 minutes for the current cluster C1, *the measure of cluster extent*, e.g., the maximum time difference of every two consecutive objects such as T1-T2 in C1, *corresponding to a current distance*, e.g., the maximum time difference of every two consecutive objects such as T1-T2 corresponds to equal of less than 60 minutes distance, *spanned by all the objects in the current object cluster*, e.g., equal or less than 60 minutes distance is spanned from every consecutive photographs in C1, *measured in the selected dimension of the context-related metadata*, e.g., the maximum 60 minutes is time measurement), and

comparing the candidate object interval to a weighted measure of object density for the current object cluster, the measure of object density corresponding to a measure of distribution of distances separating adjacent ones of the objects in the current object cluster measured in the selected dimension of the context-related metadata (During clustering, the rate at which photographs were taken within a cluster is considered. For instance, while taking a hike through a forest, someone may take a picture every couple of minutes. In contrast, when photographing a newborn baby for the first time, the time between pictures is likely to be in seconds. Different rates are taken into account by comparing each pair of consecutive photographs to the basic photographic rate of the cluster. When a pair with a time difference that appears to be outside the normal range for the cluster, a

new cluster is created (Graham, Page 4, Col. 2 Lines 33-54). The Graham's teaching as discussed indicates the step of *comparing the candidate object interval to a weighted measure of object density for the current object cluster*, e.g., time interval of two consecutive images is compared with basic photographic rate of the cluster, *the measure of object density corresponding to a measure of distribution of distances separating adjacent ones of the object in the current object cluster measured in the selected dimension of the context-related metadata*, e.g., the basic photographic rate of the cluster such as 5 sec between two consecutive photographs is a measure of distribution of distances separating the images adjacent to the current image in the cluster).

Regarding claim 2, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the measure of cluster extent for each current object cluster corresponds to a temporal distance spanned by recorded generation times associated with all objects in the current object cluster*** (Graham, Page 4, Col. 2 Lines 3-28).

Regarding claim 3, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the measure of cluster extent for each current object cluster corresponds to a spatial distance spanned by recorded generation locations associated with all objects in the current object cluster*** (Graham, Page 3, Col. 2 Line 36-Page 4, Col. 1 Line 2).

Regarding claim 4, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the measure of object density for each current object cluster corresponds to an average temporal distance separating adjacent objects in the current object cluster*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claim 5, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the measure of object density for each current object cluster corresponds to an average spatial distance separating adjacent objects in the current object cluster*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claim 6, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the classifying comprises merging consecutive ones of the candidate objects into a current one of the object clusters until the candidate object interval determined for a current one of the candidate objects exceeds the weighted measure of cluster extent for the current cluster, at which point a successive one of the object clusters in the series is initiated with the current candidate object*** (Graham, Page 4, Col. 2 Lines 3-28).

Regarding claim 7, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the classifying comprises merging consecutive ones of the candidate objects into a current one of the object clusters until the candidate object interval determined for a current one of the candidate objects exceeds the weighted measure of object density for the current object cluster, at which point a successive one of the object clusters in the series is initiated with the current candidate object*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claims 8 and 9, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the processing comprises determining the weighted measures of cluster extent by applying to the measures of cluster extent respective weights that decrease with increasing sizes of the respective object clusters*** (Graham, Page 3, Col. 2 Lines 1-10).

Regarding claim 10, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses the step of ***customizing at least one of the weights applied to the measures of cluster extent based on an analysis of objects in the corresponding object cluster*** (Graham, Page 4, Col. 2 Lines 19-28).

Regarding claim 11, Graham teaches all of the claimed subject matter as discussed above with respect to claim 10, Graham further discloses the step of ***scaling at least one of the weights applied to the measures of cluster extent based on a fractal dimension estimate of recorded time generation meta data associated with the objects in the collection*** (Graham, Page 5, Col. 1 Lines 8-15).

Regarding claim 12, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses the step of ***customizing at least one of the weights applied to the measures of cluster object density based on an analysis of objects in the corresponding object cluster*** (Graham, Page 5, Col. 2 Lines 8-15).

Regarding claim 13, Graham teaches all of the claimed subject matter as discussed above with respect to claim 12, Graham further discloses the step of ***scaling at least one of the weights applied to the measures of cluster extent based on a fractal dimension estimate of recorded time generation meta data associated with the objects in the collection*** (Graham, Page 5, Col. 1 Lines 8-15).

Regarding claim 14, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses the step of ***comparing the object density of a candidate object cluster consisting of the current object cluster and the candidate object with the weighted measure of object density for the current object cluster*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claim 15, Graham teaches all of the claimed subject matter as discussed above with respect to claim 14, Graham further discloses ***the measure of object density for each current object cluster corresponds to an average temporal distance separating adjacent objects in the current object cluster*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claim 16, Graham teaches all of the claimed subject matter as discussed above with respect to claim 14, Graham further discloses ***the measure of object density for each current object cluster corresponds to an average spatial distance separating adjacent objects in the current object cluster*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claim 17, Graham teaches all of the claimed subject matter as discussed above with respect to claim 14, Graham further discloses ***the measure of object density for each object cluster corresponds to a moving average distance separating adjacent objects in the current object cluster*** (Graham, Page 4, Col. 2 Lines 33-54).

Regarding claim 18, Graham teaches all of the claimed subject matter as discussed above with respect to claim 14, Graham further discloses the step of ***determining the weighted measures of cluster extent by applying to the measures of cluster extent respective weights that decrease with increasing sizes of the respective object clusters*** (Graham, Page 3, Col. 2 Lines 1-10).

Regarding claim 19, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses the step of ***processing each of the candidate objects sequentially beginning at a first end of the object sequence*** (Graham, Page 4, Col. 2 Lines 3-18).

Regarding claim 21, Graham teaches all of the claimed subject matter as discussed above with respect to claim 1, Graham further discloses ***the sequence to be segmented includes objects of the following types: text, audio, graphics, still images, video and business events*** (Graham, Abstract).

Regarding claims 23 and 32, Graham teaches a method of organizing a collection of objects, comprising:

segmenting objects from the collection into clusters (Graham, Page 4, Col. 2 Lines 3-54);

extracting context-related meta data corresponding to object generation location associated with the objects and parsable into multiple levels of a name hierarchy (Graham, Page 3, Col. 2-Line 39→Page 4, Col. 1-Line 2, Page 4, Col. 1-Lines 8-13, Page 5, Col. 1-Lines 16-29); and

assigning names to clusters based on the extracted context-related meta data corresponding to a level of the name hierarchy selected to distinguish segmented clusters from one another (Graham, Page 2, FIG. 1a and 1b).

Regarding claim 27, Graham teaches all of the claimed subject matter as discussed above with respect to claim 23, Graham further discloses ***the context-related meta data corresponds to recorded information relating to country, city, and state of object generation*** (Graham, Page 3, Col. 2-Line 39→Page 4, Col. 1-Line 2, the GPS location data of a taken photo, e.g., latitude and longitude, relates to country, city and state).

Regarding claim 28, Graham teaches all of the claimed subject matter as discussed above with respect to claim 23, Graham further discloses ***the context-related meta data corresponds to both object generation times and object generation locations*** (Graham, Page 3, Col. 2 Line 36-Page 4, Col. 1 Line 2).

Regarding claim 29, Graham teaches all of the claimed subject matter as discussed above with respect to claim 23, Graham further discloses the step of ***automatically naming objects in a given cluster based on the name assigned to the given cluster*** (Graham, Page 5, Col. 1 Lines 16-28 and FIG. 1a-b).

Regarding claim 30, Graham teaches all of the claimed subject matter as discussed above with respect to claim 29, Graham further discloses ***the objects in the given cluster are named automatically in accordance with a chronological ordering of the objects in the given cluster*** (Graham, Page 5, Col. 1 Lines 16-28 and FIG. 1a-b).

Regarding claim 31, Graham teaches all of the claimed subject matter as discussed above with respect to claim 29, Graham further discloses the step of ***storing objects in the given cluster in a tree structure organized by cluster and labeled in accordance with the assigned names*** (Graham, FIG. 4 and 1a-b).

Regarding claim 33, Graham teaches a method of organizing a collection of objects, comprising:

accessing a sequence of objects segmented into clusters each including multiple constituent objects arranged in a respective sequence in accordance with context-related meta data associated with the objects (Graham, Page 5, Col. 2 Lines 35-47);

selecting for each object cluster at least two constituent objects representative of beginning and ending instances in the corresponding object sequence (Page 5, Col. 2 Lines 23-47 and Page 6, Col. 1-Lines 37-49); and

in a user interface, graphically presenting the selected representative objects of each cluster without graphically presenting representations of unselected ones of the constituent objects of the clusters (The

process of creating summaries as discussed on Page 5, Col. 2 Lines 42-47 is displayed similarly as in FIG. 1a-b).

Regarding claim 34, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses the step of ***graphically presenting a selected one of the clusters as a stack of partially overlapping images representative of multiple objects in the selected cluster*** (Graham, FIG. 1a-b).

Regarding claim 35, Graham teaches all of the claimed subject matter as discussed above with respect to claim 34, Graham further disclose the step of ***revealing an increased portion of a given one of the representative images in the stack in response to detection of a user-controlled display icon positioned over the given representative image*** (Graham, FIG. 1a-b).

Regarding claim 36, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses the step of ***presenting the selected representative objects with the spacing between adjacent ones of the selected representative objects in the same cluster smaller than the spacing between adjacent ones of the selected representative objects in different clusters*** (Graham, Page 5, Col. 5 Lines 35-47).

Regarding claim 37, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses the step of ***merging objects of one cluster into an adjacent cluster in response to user input*** (Graham, Pages 3-4, Calendar Browser).

Regarding claim 39, Graham teaches all of the claimed subject matter as discussed above with respect to claim 37, Graham further discloses ***the objects of the one cluster are merged into***

the adjacent cluster in response to user selection of an icon for merging the clusters (Graham, Pages 3-4, Calendar Browser).

Regarding claim 40, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses the step of ***presenting a graphical representation of distributions of objects in the clusters*** (Graham, FIG. 1a-b).

Regarding claim 41, Graham teaches all of the claimed subject matter as discussed above with respect to claim 40, Graham further discloses ***object distribution for a given cluster is presented as object instances plotted along an axis corresponding to a scaled representation of the context-related extent spanned by the given cluster*** (Graham, FIG. 5).

Regarding claim 42, Graham teaches all of the claimed subject matter as discussed above with respect to claim 40, Graham further discloses the step of ***splitting a given cluster in response to user selection of a point in the representation of the object distribution presented for the given cluster*** (Graham, FIG. 5).

Regarding claim 43, Graham teaches all of the claimed subject matter as discussed above with respect to claim 40, Graham further discloses the step of ***automatically splitting a given cluster into two or more clusters in response to user input*** (Graham, FIG. 5).

Regarding claim 44, Graham teaches all of the claimed subject matter as discussed above with respect to claim 43, Graham further discloses ***the given cluster is automatically split into a user-selected number of sub-clusters*** (Graham, FIG. 5 and Page 5, Col. 2 Lines 14-47).

Regarding claim 45, Graham teaches all of the claimed subject matter as discussed above with respect to claim 43, Graham further discloses ***the given cluster is automatically split based on relative sizes of intervals between successive objects in the given cluster*** (Graham, Page 4, Col. 2 Lines 3-84).

Regarding claim 46, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses ***the context-related meta data corresponds to object generation times*** (Graham, Page 4, Col. 2 Lines 3-18).

Regarding claim 47, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses ***the context-related meta data corresponds to object generation locations*** (Graham, Page 3, Col. 2 Line 36-Col. 3 Line 2).

Regarding claim 48, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses ***the segmented sequence includes objects of the following types: text, audio, graphics, still images, video, and business events*** (Graham, Page 4, Col. 2 Lines 3-18).

Regarding claim 49, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, Graham further discloses the step of ***graphically presenting at least one link to an object of a cluster arranged in a sequence in accordance with time-related meta data in a calendar format*** (Graham, FIG. 1a-b).

Regarding claim 51, Graham teaches a system of organizing a collection of objects, comprising a user interface layout engine operable to perform operations comprising:

a computer-readable medium storing computer-readable instructions; and a data processing; unit coupled to the memory, operable to execute the instructions (These features are inherited features of a computer system as disclosed by Graham on Page 5, Col. 2-Lines 2-13), and based at least in part on the execution of the instructions operable to perform operations comprising

accessing a sequence of objects from the collection segmented into clusters each including multiple objects arranged in a respective sequence in accordance with context-related meta data associated with the objects (Graham, Page 5, Col. 2 Lines 35-47);

selecting for each object cluster at least two constituent objects representative of beginning and ending instances in the corresponding object sequence (Graham, Page 5, Col. 2 Lines 23-47 and Page 6, Col. 1-Lines 37-49); and

in a user interface, graphically presenting the selected representative objects of each cluster on a screen without graphically presenting representations of unselected ones of the constituent objects of the clusters (The process of creating summaries as discussed on Page 5, Col. 2 Lines 42-47 is displayed similarly as in FIG. 1a-b),

wherein the user interface layout engine presents the selected representative objects with the spacing between adjacent ones of the selected representative objects in the same cluster smaller than the spacing between adjacent ones of the selected representative objects in different clusters (Graham, Page 5, Col. 5 Lines 35-47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham et al. [Time as Essence for Photo Browsing Through Personal Digital Libraries].

Regarding claim 20, Graham teaches all of the claimed subject matter as discussed above with respect to claim 19, Graham does not teach the step of ***processing each of the candidate objects sequentially beginning at a second end of the object sequence opposite the first end***. However, clustering the image by iterating the sorted list at the other end of the list is not different from the first end. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to iterate the sorted list at the other end in order to cluster the images.

Claims 38 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham et al. [Time as Essence for Photo Browsing Through Personal Digital Libraries].

Regarding claim 38, Graham teaches all of the claimed subject matter as discussed above with respect to claim 37, but does not teach ***objects of one cluster are merged into an adjacent cluster in response to dragging and dropping of the objects to be merged***.

However, the Calendar Browser as disclosed by Graham must be implemented in a computer system with a conventional operating system such as Window XP (Graham, Page 1, Col. 2 Lines 12-21). By using Window XP, an object can be dragged and dropped from a folder to another folder.

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include the feature of dragging and dropping of Window XP into the Calendar Browser in order to manipulate objects between folders.

Regarding claim 50, Graham teaches all of the claimed subject matter as discussed above with respect to claim 33, but does not disclose the step of ***graphically presenting at least one link to an object of a cluster arranged in a sequence in accordance with location- related meta data in a map format***.

However, as suggested by Graham, the location where a photograph was taken could also be extracted form the image files and introduces as a clustering criterion (Graham, Page 3, Col. 2 Line 36-Page 4, Col. 1 Line 2).

Thus by using location for clustering, the location is used to name a folder and the process of linking is similar to FIG. 1a-b. A folder naming by location indicates a map format.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, JAMES K. TRUJILLO can be reached on 571-272-3677. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HUNG Q. PHAM
Primary Examiner
Art Unit 2159

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